



Daily bathing with 4% CHGwr helps prevent infection in ICU



According to researchers in Italy, daily bathing with a soap-like solution of 4% chlorhexidine (CHG) followed by water rinsing (CHGwr) could decrease the incidence of hospital acquired infections (HAIs) in intensive care settings. However, more studies are necessary to determine whether this approach is a completely safe infection control strategy, the researchers note.

HAIs, especially bloodstream infections (BSI) and central line-associated BSI (CLABSI), lead to increased morbidity, mortality and healthcare costs. Skin and its microbial flora represent the most important pathogens reservoir for BSI and CLABSI. Daily bathing with 2% CHG has been one of the most investigated infection control strategies, especially in intensive care settings.

However, a large cluster randomised trial of more than 10,000 patients showed that bathing with 2% CHG did not reduce the incidence of HAIs including CLABSI, catheter-related urinary tract infection (CAUTI), ventilator associated pneumonia (VAP) and *Clostridium difficile* colitis. Moreover, some studies recently showed that prolonged exposure to 2% CHG can induce resistance to this antiseptic agent.

The current study aimed to evaluate the effect of daily bathing with 4% CHGwr on the acquisition rate of HAI in intensive care settings. In this randomised controlled trial, infectious diseases specialists were blinded to the intervention status. All patients admitted to the Intensive Care Unit (ICU) and to the Postoperative Cardiosurgical Intensive Care Unit (PC-ICU) of the University Hospital of Perugia were enrolled and randomised to intervention arm (daily bathing with 4% CHGwr) or to control arm (daily bathing with standard soap). The incidence rate of acquisition of HAIs was compared between the two arms as primary outcome. The researchers also evaluated the incidence of BSI, CLABSI, VAP, and CAUTI and 4% CHGwr safety.

In all, 449 patients were enrolled; 226 in treatment arm and 223 in control arm. Thirty-four patients out of 226 (15%) and 57/223 (25.6%) suffered from at least an HAI in intervention and control arm, respectively ($p=0.008$); 23.2 and 40.9 infections/1,000 patient-days were detected in intervention arm and control arm, respectively ($p=0.037$). Incidence of all bloodstream infections (BSI plus CLABSI) was significantly reduced in the intervention arm (9.2 vs. 22.6 infections/1,000 patient-days, $p=0.027$); no differences were observed in the mortality between the two arms.

"Despite 4% CHGwr daily bathing, 34 patients in the intervention arm were diagnosed with an HAI. Obviously, HAIs cannot be completely eliminated. However, we found that HAIs are at least postponed by 4% CHGwr daily bathing so that, performing this infection control strategy, infection-free time is significantly increased," the researchers explain.

CHG daily bathing appears to be associated with greater effect against Gram positive microorganisms than against Gram negative ones. This is supported by the current study's findings: Gram positive isolates decreased by 58% ($p=0.02$), while Gram negative ones did not reach the threshold of significance.

"Although in the present study a double concentration of chlorhexidine was used, we observed a single adverse event – a mild skin rash that promptly disappeared after 4% CHGwr bathing discontinuation – and all-cause mortality rate during the study period was the same in the two arms," the researchers add.

Source: [Clinical Microbiology and Infection](#)

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